FACT SHEET FOR NPDES PERMIT WA-000062-1

FACILITY NAME Kimberly Clark Worldwide, Inc.

SUMMARY

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the State of Washington to administer the NPDES permit program. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

Applicant	Kimberly Clark Worldwide, Inc.			
Address	2600 Federal Avenue; Everett, Washington 98201			
Type of Facility:	Pulp and Paper Mill			
SIC Code	2621			
Outfall	Waterbody	Latitude	Longitude	Water Body ID
001*	Port Gardner Bay	47° 58’ 18” N	122° 14’ 20” W	WA-PS-0030
003*	Everett Harbor	47° 59’ 03” N	122° 13’ 08” W	WA-07-0010
008*	Everett Harbor	47° 59’ 18” N	122° 13’ 06” W	WA-07-0010
100	Port Gardner Bay	47° 59' 14" N	122° 14' 48" W	WA-PS-0030
*Outfalls 001, 003, and 008 will be taken out of service after startup of outfall 100 in 2004				

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

Ground was initially broken at the site for a pulp mill by Puget Sound Pulp and Timber Company in 1929. In 1931 operations at the site produced 300 tons per day of calcium based sulfite pulp from six digesters. In 1936, Soundview Pulp Company assumed ownership, and six digesters were added in 1937 bringing production to 600 tons per day. Scott Paper acquired the mill in 1951 and built four tissue machines. A fifth machine was added in 1979. Scott Paper merged with Kimberly-Clark Corporation in late 1995 and operates under the name of Kimberly-Clark Worldwide, Inc.

For the first twenty years of operation, all mill effluent was discharged via a single discharge point to the Everett inner harbor, outfall 003. In 1951, a new outfall (001) was constructed in conjunction with the Weyerhaeuser sulfite mill then operating to the south of Soundview Pulp to convey spent sulfite liquor (SSL) from both mills to the deep waters of Port Gardner Bay. In 1964, the mill became the first mill in the Northwest to install primary treatment for removal of total suspended solids. In 1974, the mill constructed a sulfite recovery boiler to recover spent liquor from the majority of the operation and combust it for steam generation replacing fossil fuels. In 1979, secondary treatment was installed to treat high BOD waste from boiler condensates and the bleach plant. A new outfall (008) was constructed for the discharge of secondary effluent in 1979.

The mill converted from calcium to ammonia base prior to the construction of the sulfite recovery boiler in 1974; calcium base was not amenable to chemical recovery and liquor combustion. In 2000, the mill changed from a chlorine gas bleaching sequence to a chlorine dioxide bleaching sequence as required by the EPA Cluster Rule. The mill operates elemental chlorine free (ECF). The mill upgraded its wastewater treatment plant in 2002 when new aeration diffusers and a biological selector were installed. The upgrade made it possible to pump primary effluent to the secondary treatment plant. The company and the City of Everett are combining resources to build a deep water outfall. The expected completion date for the new outfall is 2004.

INDUSTRIAL PROCESS

The facility is an ammonia based sulfite pulp and paper mill that produces market pulp and tissue paper. The mill produces 507 air dry tons per day (ADT/day) paper grade sulfite pulp. The mill imports a total of 188 tons/day of non-integrated tissue pulp. The mill employs approximately 900 people and operates 24 hours a day through the year with a week of shut down for maintenance. It uses on an average 34 million gallons per day of fresh water and treats the wastewater with primary clarification, secondary biological water treatment, and secondary clarification before discharging the wastewater.

Discharge Outfall

The mill's wastewater currently discharges through three outfalls, 001, 003, and 008. Pulp screening water, paper making effluent, boiler house ash quenching water, freshwater filter backwash, dewatering pressate and noncontact cooling water receives primary treatment. The primary effluent discharges through outfalls 001 and 003 along with non-contact cooling water. Process wastewater from the pulp mill and paper mill receives secondary treatment before being discharged through outfall 008.

Outfall 001 discharges via a 30 inch diameter line and extends 3000 feet due West into Port Gardner. The outfall discharges at a depth of 340 feet. Outfall 003 discharges wastewater into the East Waterway of Everett Harbor. This header is located along the mill's warehouse dock in 25 feet of water. The third outfall, outfall 008, discharges to East Waterway of Everett Harbor via 36 inch diameter outfall extending 255 feet in a west-northwest direction to a depth of 27 feet. The mill is constructing a replacement outfall in 2003, which has been designated Outfall 100. This outfall will combine the mill's flow from the existing three outfalls and will eventually include treated municipal effluents from the cities of Everett and Marysville. Outfall 100 will convey these effluents to the deep waters of Port Gardner Bay. It will thus eliminate discharges of treated industrial effluents from the shallow Everett inner harbor, and will remove most of Everett's and Marysville's municipal effluent discharges from the Snohomish River. The construction of outfall 100 commenced in the spring of 2003. Outfall 001 will be abandoned in the summer of 2003 since it lies in the path of the new outfall. During the construction period, primary effluent and non-contact cooling water will be discharged out of outfall 003. Upon completion outfall 100 in early 2004, outfalls 003 and 008 will no longer be used except in emergency situations. Outfalls 003 and 008 will remain in place to prevent flooding should the mill experience a power failure.

PERMIT STATUS

An application for permit renewal was submitted to the Department in November of 1995 and accepted by the Department in December 1995. The permit application was updated on September 24, 2002. The previous permit for this facility was issued on May 15, 1991 and remains in effect until replaced by the new permit being proposed. The previous permit placed BOD, TSS, pH, and salmon bioassay effluent limitations on the treated wastewater and had monitoring requirements for AOX, dioxins, and furans.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

A Class II inspection was conducted April 22-23, 2003. The Permittee was found to be in compliance at that time. During the term of the previous permit, the Permittee has had a few compliance issues with pH control and TSS based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department. The pH problems occurred in the early 1990's due to system monitoring/control and maintenance problems. The problem was rectified due to modification and improvement to the pH control monitors and improved maintenance. TSS problems occurred later in the 90's due to malfunction of the clarifier sludge dewatering system. This system was repaired and since that time TSS has not been a problem. In addition, the secondary treatment system that discharges to Outfall 008 has

experienced two TSS problems in 2002 and 2003 due to a change in the wastewater characteristics following the conversion to ECF bleaching. The treatment system has been upgraded to prevent reoccurrences of this problem.

WASTEWATER CHARACTERIZATION

The proposed wastewater discharge is characterized for the following regulated parameters found in detectable concentrations:

	CONCENTRATION [mg/l]		
PARAMETER	**OUTFALL 001**	**OUTFALL 003**	**OUTFALL 008**
BOD	**52**	**33**	**20**
Chemical Oxygen Demand	**345**	**190**	**673**
Total Organic Carbon	**4.2**	**0.6**	**1.8**
TSS	**38**	**50**	**36**
Ammonia	**2.0**	**0.7**	**5.9**
Flow	**7.5 mgd**	**14.5 mgd**	**12.8 mgd**
Temp (winter)	**29 deg C**	**33 deg C**	**38 deg C**
Temp (summer)	**32 deg C**	**36 deg C**	**39 deg C**
Color	**70 color units**	**70 color units**	**800 color units**
pH	**Min 4.0 max 9.8**	**Min 4.9 max 10.3**	**Min 5.7 max 7.6**
Fecal Coliform	**>1600 / 100 ml**	**>1600 MPN/ 100 ml**	**>1600 MPN/ 100 ml**
Oil and Grease	**<5.0**	**-**	**-**
Nitrate	**-**	**-**	**0.7**
Nitrogen, Total Organic	**3.1**	**1.8**	**6.4**
Phosphorus, Total	**0.6**	**0.2**	**3.2**
Sulfate	**29.8**	**23.3**	**994**
Aluminum, Total	**0.076**	**0.053**	**0.485**
Barium, Total	**.018**	**0.012**	**0.084**
Boron	**0.016**	**0.01**	**0.03**
Cobalt, Total	**0.0002**	**0.0001**	**0.0035**
Iron, Total	**0.328**	**0.195**	**0.700**
Magnesium, Total	**0.87**	**0.702**	**6.55**
Molybdenum, Total	**0.0011**	**0.0008**	**0.0013**
Manganese, Total	**0.049**	**0.031**	**0.633**
Titanium, Total	**0.0068**	**-**	**0.037**
Antimony, Total	**0.0005**	**0.0004**	**0.0006**
Arsenic, Total	**0.0058**	**0.0042**	**0.0056**
Cadmium, Total	**0.0004**	**0.0002**	**0.0014**
Chromium, Total	**0.0018**	**0.0011**	**0.0092**
Copper, Total	**0.0092**	**0.0094**	**0.016**
Lead, Total	**0.007**	**0.0046**	**0.0025**
Mercury, Total	**0.0000024**	**0.0000061**	**-**
Nickel, Total	**0.0019**	**0.0013**	**0.032**
Silver, Total	**0.00005**	**-**	**0.00005**
Thallium, Total	**-**	**-**	**0.00005**
Zinc, Total	**0.0254**	**0.015**	**0.128**
Phenols,Total	**0.00005**	**0.00004**	**0.00002**
Chloroform	**0.012**	**0.0081**	**-**
Sulfide	**3**	**5**	**2**

	CONCENTRATION [mg/l]		
PARAMETER	**OUTFALL 001**	**OUTFALL 003**	**OUTFALL 008**
Sulfite	**2**	**-**	**-**
Surfactants	**0.1**	**0.06**	**0.06**

In past years, annual testing for dioxin (2,3,7,8-TCDD) in mill effluents has occasionally shown detectable amounts in outfalls 001 and 003. Ecology has determined that this situation was caused by boiler ash entering the primary effluent from the wood waste boiler fly ash. Particulates in boiler flue gas are collected by a state-of-the-art baghouse; historically the fly ash from the baghouse was sluiced to the primary treatment plant, where some ash could enter the effluent stream. Kimberly-Clark operates a recycle system that captures the fly ash for disposal in a regulated landfill. Operation of this system has reduced 2,3,7,8-TCDD in effluent to non-detect.

SEPA COMPLIANCE

There are no SEPA requirements related to this action.

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent**.** Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and/or do not have a reasonable potential to cause a water quality violation**.** Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

The wastewater treatment system is properly designed to meet the proposed permit limitations.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Technology-based limitations are set by regulations or developed on a case by case basis. The federal effluent guidelines for best practicable control technically available (BPT) for paper made by the ammonia sulfite pulping process, Title 40, Code of Federal Regulations (CFR) Part 430.50, Subpart E, were published April 15, 1998. The ammonia sulfite papergrade effluent guidelines were published less than ten years ago and are considered to be equivalent to all known, available, and reasonable methods of treatment (AKART) for conventional pollutants.

40 CFR Part 430.52 Subpart E
(Sulfite pulping where vacuum or pressure drums are used to wash pulp)
BPT effluent limitations

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values
	Pounds per 1,000 pound of product	
BOD_5	29.75	15.5
TSS	43.95	23.65
pH	5.0 to 9.0	

The non-integrated tissue paper grade was published in the federal register on November 18, 1982 and March 30, 1983. The federal effluent guidelines for best conventional pollutants control technology (BCT) was defined on December 17, 1986 to be the same as BPT previously defined in March 1983 for non-integrated wood furnished fiber for tissue paper. Since, the effluent guidelines were defined for non-integrated wood furnished fiber more than ten years ago, it must be determined if these guidelines can be equated to (AKART) for conventional pollutants.

On April 15, 1998, the Environmental Protection Agency promulgated effluent guidelines for the bleached Kraft Paper grade and Soda subcategories and Paper grade Sulfite subcategory (Subparts B and E, respectively). The 1998 allowances in both Subparts for BOD and TSS in pounds per 1000 pounds of pulp produced for the above categories were set at the same values as the allowances in the effluent guidelines published in 1982. The 1998 effluent guidelines took both emissions to air and water into consideration and included chlorinated organic compounds. Secondary treatment was the required type of treatment.

The 1982 and 1998 effluent guidelines for nonintegrated tissue paper production are determined to be AKART for the following reasons.

- There were no changes for conventional pollutants allowances in the new guidelines for the type of paper making promulgated on April 15, 1998
- Secondary treatment has been and is expected to remain the level of treatment that the effluent guidelines are based on.

- Five other permits have been issued and another one has been drafted with the 1982 effluent guidelines being determined to be equivalent to AKART.

The effluent guidelines for non-integrated tissue paper grade were published in the federal register on November 18, 1982 and March 30, 1983. The federal effluent guidelines for best conventional pollutants control technology (BCT) were defined on December 17, 1986 under Title 40 CFR 430.182 Subpart S to be the same as BPT previously defined in March 1983 for non-integrated wood furnished fiber for tissue paper. Since the effluent guidelines were defined for non-integrated wood furnished fiber more than ten years ago, it must be determined if these guidelines can be equated to (AKART) for conventional pollutants.

On April 15, 1998, the Environmental Protection Agency republished the effluent guidelines for the Tissue, Filter, Non-Woven and Paperboard from Purchased Pulp subcategory, Title 40, Code of Federal regulations (CFR) Part 430.120, Subpart L. The 1998 allowances for BOD and TSS in pounds per 1000 pounds of tissue paper produced from purchased pulp are the same as for the former Subpart S under the earlier effluent guidelines. The 1982 guidelines as republished in 1998 are as follows for nonintegrated tissue paper production and will be used in the proposed permit to calculate the BOD and TSS limit.

40 CFR Part 430.122 Subpart L
(Tissue from purchased pulp)
BPT effluent limitations

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values
	Pounds per 1,000 pound of product	
BOD_5	11.4	6.25
TSS	10.25	5.0
pH	5.0 to 9.0	

The above allowances are summarized below in terms of lbs/ADT with the production given in tons/day paper.

ALLOWABLE DISCHARGE BASED ON PRODUCTION

Pulp type		BOD		TSS	
	AMOUNT	Average	Daily maximum	Average	Daily maximum
	[ADT]	[lbs/ADT]	[lbs/ADT]	[lbs/ADT]	[lbs/ADT]
SULFITE	507	31	59.5	47.3	87.9
Non-integrated	188	12.5	22.8	10	20.5

PROPOSED LIMITS

PARAMETER	Limitation [lbs/day]	
	Monthly Ave.	Daily Max.
Biochemical Oxygen Demand (5 day)	18,100 lbs/day	34,500 lbs/day
Total Suspended Solids	25,900 lbs/day	48,400 lbs/day
pH range	5.0 to 9.0	

Determination of AKART for the bleaching process used at the mill

The 1998 effluent guidelines (40 CFR 430.54) defined best available technology economically achievable as elemental chlorine free (ECF). Since the 1998 effluent guidelines were promulgated less than ten years ago, all known and reasonable treatment (AKART) for the bleaching process for Kimberly Clark Worldwide at Everett Washington is defined as ECF.

The 1998 effluent guidelines (40 CFR 430.54) limited the chlorinated phenolic pollutants for the pulp produced at ammonia sulfite mills as follows for Bleach Plant Effluent Compliance:

Compounds	Method	Limit
2,3,7,8-TCDD	1613	< 10 pg/L
2,3,7,8-TCDF	1613	< 10 pg/L
Trichlorosyringol	1653	< 2.5 µg/L
3,4,5-Trichlorocatechol	1653	< 5.0 µg/L
3,4,6-Trichlorocatechol	1653	< 5.0 µg/L
3,4,5-Trichloroguaiacol	1653	< 2.5 µg/L
3,4,6-Trichloroguaiacol	1653	< 2.5 µg/L
4,5,6-Trichloroguaiacol	1653	< 2.5 µg/L
2,4,5-Trichlorophenol	1653	< 2.5 µg/L
2,4,6-Trichlorophenol	1653	< 2.5 µg/L
Tetrachlorocatechol	1653	< 5.0 µg/L
Tetrachloroguaiacol	1653	< 5.0 µg/L
2,3,4,6-Tetrachlorophenol	1653	< 2.5 µg/L
Pentachlorophenol	1653	< 5.0 µg/L

These limitations are placed in the proposed permit. Compliance with these limitations is to be determined at the bleach plant effluent. The Permittee has recently been sampling the bleach plant effluent for dioxins and furans. The results of these tests showed that the mill could not meet the proposed permit limit for TCDF. After an extensive investigation and sampling program, Kimberly Clark determined that a portion of the TCDF was coming into the bleach plant from the fresh water intake. The problem with the fresh water intake and meeting the furan limit imposed by the effluent guidelines was referred to the Environmental Protection Agency in Washington DC. EPA advised that the Permittee could net out the concentration of TCDF found in the fresh water intake consistent with 40 CFR 122.45(g), that is, subtract the incoming TCDF concentration from the effluent TCDF concentration. The Permittee is continuing to

sample the fresh water intake for TCDF. The TCDF concentration is highest during the late spring and up to early fall. The proposed permit allows the Permittee to net out TCDF in the fresh water intake concentration to determine compliance.

A place holder was established in the effluent guidelines for chloroform, AOX, and COD. No limitations for these chemicals are placed in the proposed permit. However, the Permittee will be required to monitor for these parameters. The proposed permit will require monitoring the bleach plant effluent for chloroform and the final effluent for COD and AOX.

The Permittee must prepare an application for permit renewal during the fifth year of the permit term. As part of the application, the Permittee is required to provide data on the chemicals (known as a priority pollutant scan) contained in the effluent. The proposed permit requires the Permittee to perform the test for these chemicals on a yearly basis.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in the receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific

beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTIDEGRADATION

The State of Washington's Antidegradation Policy requires that discharges into the receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of the receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of the receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The designated classification criteria are given in Chapter 173-201A WAC. The Department will use these designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

Outfalls 003 and 008 discharge to Everett Harbor which are designated Class B marine waters in the vicinity of these outfalls. Outfall 001 discharges to Port Gardener Bay which is designated Class A marine waters in the vicinity of the outfall. Other nearby point sources outfalls include City of Everett and Everett Naval Base storm water discharges. Significant nearby non-point source of pollutants includes Port of Everett's log yard and log rafting activities. Characteristic uses include the following: fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for these waters are summarized below:

Outfalls 001 and 100

	Class A	Port Gardner Bay
Fecal Coliforms	14	organisms/100 mL maximum geometric mean
Dissolved Oxygen	8	mg/L minimum
Temperature	16	degrees Celsius maximum or 0.3 degrees centigrade incremental increases above background
pH	7.0 to 8.5	standard units
Turbidity	less than 5 NTU above background if background is 50 NTU or less less than 10 NTU above background if background is more than 50 NTU	
Toxics	No toxics in toxic amounts for numeric criteria for toxics of concern for this discharge	

Outfalls 003 and 008

	Class B	Inner Everett Harbor
Fecal Coliforms	100	organisms/100 mL maximum geometric mean
Dissolved Oxygen	5	mg/L minimum
Temperature	19	degrees Celsius maximum or incremental increases above background
pH	7.0 to 8.5	standard units
Turbidity	less than 10 NTU above background	
Toxics	No toxics in toxic amounts for numeric criteria for toxics of concern for this discharge	

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

If pollutant concentrations in the proposed discharges exceed water quality criteria with technology-based controls which the Department has determined to be AKART a mixing zone is

authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC.

The dilution factors for Outfalls 001, 003, and 008 were calculated with a simplified Umerge model in 1992. A dye study was done in 1974 for outfall 003. The size and dilution factor are given for outfalls 001, 003, and 008. The dimension and dilution factor for the new outfall (100) will be determined under Special condition S13. The dilution factor may be in excess of 1000:1 during the first five years of operation.

	Acute mixing zone		Chronic mixing zone	
Outfall #	Distance from diffuser	Dilution Factor	Distance from diffuser	Dilution Factor
001	62 feet	35:1	620 ft	889:1
003	32.4 ft	10:1	324 ft	19:1
008	32.4 ft	10:1	324 ft	35:1

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water. The impacts of dissolved oxygen deficiency, temperature, pH, fecal coliform, ammonia, metals, and other toxics were determined as shown below, using the dilution factors at critical conditions described above.

BOD_5--The discharge with technology-based limitations results in a small amount of BOD loading relative to the large amount of dilution occurring in the receiving water at critical conditions. Technology-based limitations will be protective of dissolved oxygen criteria in the receiving water.

Temperature--The impacts of the discharges on the temperature of the receiving waters for all outfalls were modeled by simple mixing analysis at the critical condition.

Outfall 001: The receiving water temperature at the critical condition is 16 ^{o}C. The highest temperature of the receiving water is 17.93 ^{o}C The highest effluent temperature is 34 ^{o}C. The dilution is 889:1. Therefore, by simple mixing, the predicted resultant temperature at the boundary of the chronic mixing zone is 17.95 ^{o}C, The incremental temperature increase is 0.02 ^{o}C. Since the resultant incremental increase is less than 0.3 ^{o}C, the water quality criteria for temperature is met.

Outfall 003: The receiving water temperature at the critical condition is 19 ^{o}C. The highest receiving water temperature is 18.5 ^{o}C and the highest effluent temperature is 36 ^{o}C. The predicted resultant temperature at the boundary of the chronic mixing zone is 19.4 ^{o}C. The chronic dilution factor is 19:1. Since the receiving water temperature is below the critical

temperature, the incremental increase in temperature is defined as 16/T, where T is the ambient temperature. The allowed incremental increase is 0.9 ^{o}C. The actual increase is the same as the allowed increase; therefore, the water quality criteria are met at the boundary of the chronic mixing zone.

Outfall 008: The receiving water temperature at the critical condition is 18.5 ^{o}C and the effluent temperature is 39 ^{o}C. The chronic dilution factor is 35:1. The predicted resultant temperature at the boundary of the chronic mixing zone is 19.00 ^{o}C. The actual increase is below the allowed increase of 0.87 ^{o}C; therefore, the water quality criteria for temperature are met.

No temperature limitations are placed in the proposed permit; however, the Permittee is required to monitor temperature.

pH limitations under continuous monitoring--In accordance with RCW 90.48, all dischargers shall use all known available and reasonable methods of treatment. The department may establish more restrictive standards than established by the EPA to conform to state law.

EPA has published a standard variance for pH at industrial plants having continuous pH measuring devices (40 CFR Part 401.17.) This variance allows an uncontrolled pH discharge beyond the permitted range for 1 hour at any pH level, and total pH excursions of up to 7 hours, 26 minutes per month. This variance does not take into consideration the type of treatment provided, the strength of acidity or alkalinity of the waste, the volume of waste, or the receiving water characteristics and the subsequent effect on the aquatic community.

In this NPDES permit the pH variance allowance was further restricted by the department to one pH unit beyond the permitted range. Excursions between 4.0 and 10.0 shall not be considered violations provided no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 26 minutes per month. Any excursions below 4.0 and above 10.0 for more than 10 consecutive minutes shall be considered violations. The instantaneous maximum and minimum pH shall be reported monthly.

Because of the high buffering capacity of marine water, compliance with the technology-based limits will assure compliance with the Water Quality Standards for Surface Waters.

Fecal coliform –Outfall 001, 003, and 008 will be abandoned when outfall 100 becomes operational. With the limited amount of data from the three outfalls and with these outfalls being abandoned in 2004, Ecology will require monitoring for fecal coliform when the new outfall starts servicing the mill.

Turbidity--The impact of turbidity was evaluated based on the range of turbidity in the effluent and turbidity of the receiving water. Due to the large degree of dilution, it was determined that the turbidity criteria would not be violated outside the designated mixing zone.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent

limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The toxics present in the discharge are given in the table listed under 'Wastewater Characterization' above. A reasonable potential analysis was conducted on these parameters to determine whether or not effluent limitations would be required in this permit. The reasonable potential analyses showed that none of the chemicals found in the effluent were above the water quality criteria at the edge of the acute or chronic mixing zone boundary.

STORMWATER

Stormwater from the majority of the facility is treated and discharged with the process water. A very minor amount (<1%) is discharged directly to the East Waterway of Everett Harbor. The bulk of the sources for these direct discharges are vehicle loading areas and parking lot runoff. The facility will be required to use Best Management Practices (BMP) for all stormwater runoff.

WHOLE EFFLUENT TOXICITY

The last WET testing for the acute and chronic tests species was performed about 10 years ago. Because the WET rule has changed, the Permittee is constructing a new outfall, the dilution factor will change, and the mill processes have changed, the Permittee is required to re-characterize their effluent in the proposed permit for outfall 100. The Permittee will be required to recharacterize the acute and chronic toxicity of the effluent after completion of the new combined outfall 100 in the first year of the permit term. These studies are delayed until outfall 100 is operational because of timing. By the time a year long study could be done on outfalls 001, 003, and 008, they would be inoperative.

HUMAN HEALTH

Washington's water quality standards include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The Department has determined that there are no reasonable potential to exceed the health quality criteria.

SEDIMENT QUALITY

Outfall 100 is being designed to discharge in an area of deep water where there is currently little or no sediment contamination. Due to the high degree of treatment provided to both the K-C and municipal effluents which will be discharged from this outfall, and due to the high degree of dispersion which will be provided, there is little likelihood of sediments accumulation. Nevertheless, Ecology believes that a baseline sediment evaluation should be conducted so that any effects over time can be evaluated. All of the current outfalls will be abandoned. Therefore, Ecology will not require sediment monitoring of outfall 001, 003, or 008 during the terms of the proposed permit.

The Permittee will only use outfalls 003 and 008 during mill power outages, similar emergency events, and mill shutdowns. The use of these outfalls is expected to be infrequent. The permit

requires the Permittee to report the time and duration of each use of these outfalls on their monthly DMR reports.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100). The Permittee has no discharge to ground water; therefore, no limitations are required based on potential effects to ground water.

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED 1991

Parameter	Existing Limits	Proposed Limits
BOD		
Monthly Average	15,967 lbs/day	18,100 lbs/day
Daily Maximum	30,577 lbs/day	34,500 lbs/day
TSS		
Monthly Average	23,919 lbs/day	25,900 lbs/day
Daily Maximum	44,558 lbs/day	48,400 lbs/day
pH		
Outfall 008		
Minimum	5 SU - 1 SU for ≤ 60 minutes[1]	5 SU - 1 SU for ≤ 60 minutes[1,3]
Maximum	9 SU +1 SU for ≤ 60 minutes[1]	9 SU +1 SU for ≤ 60 minutes[1,3]
Outfall 001 & 003		
Minimum	5 SU – 1.5 SU for ≤ 30 minutes[2]	5 SU –1 SU for ≤ 60 minutes[1,3]
Maximum	9 SU +1.5 SU for ≤ 30 minutes[2]	9 SU +1 SU for ≤ 60 minutes[1,3]
Outfall 100		
Minimum		5 SU – 1 SU for ≤ 60 minutes[1,3]
Maximum		9 SU +1 SU for ≤ 60 minutes[1,3]

[1] Total exceptions ≤ 7 hours 26 minutes per month

[2] Total exceptions for both outfalls ≤ 90 minutes per month, no individual excursion lasting more than 30 minutes, and no individual excursion shall exceed the range of 3.5 to 10.5 for more than 10 consecutive minutes.

[3] Any excursions below 4.0 or above 10.0 for more than 10 consecutive minutes shall be considered violations. Excursions between 4.0 and 5.0, or 9.0 and 10.0 shall not be considered violations provided no single excursion exceeds 60 minutes in length.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved. The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories.* The laboratory at this facility is accredited for biochemical demand, total suspended solids, and pH.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The permit condition S3 is based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

NON-ROUTINE AND UNANTICIPATED DISCHARGES

Occasionally, this facility may generate wastewater which is not characterized in their permit application because it is not a routine discharge and was not anticipated at the time of application. These typically are waters used to pressure test storage tanks or fire water systems or leaks from drinking water systems. These are typically clean waste waters but may be contaminated with pollutants. The permit contains an authorization for non-routine and unanticipated discharges. The permit requires a characterization of these waste waters for pollutants and examination of the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and opportunities for reuse, Ecology may authorize a direct discharge via the process wastewater outfall or through a storm water outfall for clean water, require the wastewater to be placed through the facilities wastewater treatment process or require the water to be reused.

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080. The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

SOLID WASTE PLAN

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste. This proposed permit requires, under the authority of RCW 90.48.080, that the Permittee update the solid waste plan designed to prevent solid waste from causing pollution of the waters of the state. The plan must be submitted to the local permitting agency for approval, if necessary, and to the Department.

EFFLUENT MIXING STUDY

The Department has estimated the amount of mixing of the discharge within the authorized mixing zone to determine the potential for violations of the Water Quality Standards for Surface Waters (Chapter 173-201A WAC). Condition S 13 of this permit requires the Permittee to accurately determine the mixing characteristics of the discharge for outfall 100. Mixing will be measured or modeled under conditions specified in the permit to assess whether assumptions made about dilution will protect the receiving water quality outside the allotted dilution zone boundary.

TREATMENT SYSTEM OPERATING PLAN

In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system (40 CFR 122.41(e)) and WAC 173-220-150 (1)(g). It has been determined that the implementation of the procedures in the Treatment System Operating Plan is a reasonable measure to ensure compliance with the terms and limitations in the permit.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for 5 years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Ecology.

Laws and Regulations (http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information (http://www.ecy.wa.gov/programs/wq/wastewater/index.html

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

The Department will publish a Public Notice of Draft (PNOD) on July 1, 2003 in Everett Herald to inform the public that a draft permit and a fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Don Nelson
Industrial Section
Department of Ecology
P. O. Box 47706
Olympia, WA 98504-7706

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within sixty (60) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 360-407-6940, or by writing to the address listed above.

This permit and factsheet were written by Don Nelson.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at http://www.ecy.wa.gov.

APPENDIX D--RESPONSE TO COMMENTS